

VALIDATION OF SOIL MOISTURE PRODUCTS DERIVED FROM ERS AND ASCAT SCATTEROMETERS OVER A SEMI-ARID REGION IN NORTH AFRICA

ABSTRACT

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In semi-arid regions, and northern Africa in particular, the scarcity of rainfall and the occurrence of long periods of drought, represent one of the main environmental factors having a negative effect on agricultural productivity. This is the case in Central Tunisia, where the monitoring of agricultural water resources - evapotranspiration - is of prime importance. Soil moisture is a key parameter in this objective. Radar remote sensing has shown in the last decades a high potential to estimate soil moisture.

This study presents an analysis of soil moisture products derived from ERS and ASCAT scatterometers (Vienna University products) over Central Tunisia. A validation of soil moisture products is realized using firstly ground measurements (based on thetaprobe instruments with continuous measurements during 2008-2010 period). Second, an analysis of correlation with rainfall events is proposed during 1991-2010. Third, comparisons with GSWP outputs are proposed for ERS products.

Different indexes related to vegetation development are proposed for the preliminary forecasting of vegetation development, using moisture measurements only.